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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/806,149	03/23/2004	Tadamoto Tamai	042188	1981

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EXAMINER

KEENAN, JAMES W

ART UNIT	PAPER NUMBER
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3652

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/16/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/806,149

Applicant(s)

TAMAI, TADAMOTO

Examiner

James Keenan

Art Unit

3652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received..

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/23/07 has been entered.

2. Claim 9 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Because of the amendments made to claim 1, claim 9 no longer further limits claim 1.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The recitation of "the second load-lock mechanism" lacks antecedent basis, and it is not clear what is meant by "the swing axial".

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claim 8 is rejected under 35 U.S.C. 102(b) as being anticipated by Mitchell et al (US 6,350,097, previously cited).

Mitchell shows a vacuum processing system comprising vacuum chamber 1, first load lock mechanism 3 (or 4), a holding mechanism (electrostatic chuck; not shown but described in col. 3, lines 27-57) in the vacuum chamber for moving an object between a process position and a load position, and an internal arm capable of exchanging an object at the load position with another object, wherein the internal arm includes first and second independently swinging arms 22, 29 supported at different positions in a swing axial direction 23, the first arm capable of swinging in a first direction to move an object at the load position to the first load lock mechanism, while the second arm is capable of swinging in a second opposite direction to move another object from the first load lock mechanism to the load position (col. 5, lines 17-49 and col. 6, lines 13-61).

While applicant may argue that the arms of Mitchell are not capable of simultaneously swinging in the manner set forth, allegedly because one of the arms would be blocked from entering the load lock while the other arm is already in the load lock, this is not what the claim requires. Rather, the claim requires the arms to be **capable of** swinging in opposite first and second directions, which the arms of Mitchell

clearly do. It does not require the arms to actually perform the functions of simultaneously loading and unloading respective objects to and from the load lock mechanism. Applicant is not claiming a method in which particular steps must actually be performed. Furthermore, even if the claim was interpreted as requiring the arms to be inserted into the load lock simultaneously, it is noted that the claim merely requires a generic "load-lock mechanism". Nothing precludes the upper and lower load locks of Mitchell from collectively being considered a "load-lock mechanism". Thus, one arm loading the upper load lock while the other arm was unloading the lower load lock, or vice-versa, could conceivably be permitted under the broad recitation of a "load-lock mechanism". Finally, it is noted that because the arms of Mitchell are able to move vertically along the swing axis, it is also conceivable that they could be controlled such that a carefully executed combination of vertical and rotational motion would allow the swing arms to simultaneously perform the functional recitations set forth in the claim. Again, it is noted that the arms need only be capable of having such movements; the movements themselves do not need to be explicitly disclosed.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dickinson (US 6,852,644, previously cited) in view of Mitchell et al.

Dickinson shows a vacuum processing system comprising vacuum chamber 64, first and second load locks 70, 76, external arm 90 capable of carrying the process object into at least the first load lock chamber, and first and second robot arms 88, 92 each of which is capable of transferring the process object between a stock site 84 and the external arm, and between the stock site and the corresponding first or second load lock. Since both arms are clearly "capable" of reaching the stock site, the external arm, and at least one load lock, they are therefore inherently "capable" of transferring wafers in the manner set forth, even though not explicitly disclosed. Applicant is not claiming a method in which particular steps must actually be performed.

Dickinson does not show the external arm capable of carrying the object to both the first and second load lock mechanisms, as now required by claim 1 (and as previously set forth in dependent claim 9).

Mitchell, as noted previously, shows an external robot 16 which is capable of moving an object from an external magazine to an orientation device and then to either of the load locks (col. 5, line 50 to col. 6, line 25).

It would have been obvious for one of ordinary skill in the art at the time of the invention to have modified the apparatus of Dickinson such that the external arm could access both of the load locks, as shown by Mitchell, to enhance throughput.

Re claims 2 and 7, Dickinson discloses aligner 94 which is also considered a buffer, absent any further structural limitations. Mitchell also discloses an orientation apparatus on the outside of the load lock (col. 5, lines 66-67).

Re claims 3 and 4, Dickinson clearly discloses controls capable of operating the arms in the manner set forth. Again, note that functional recitations in an apparatus claim need not be explicitly disclosed by a reference but must merely be capable of being performed by that reference.

Re claim 5, Dickinson shows only a single robot arm 82 in the vacuum chamber rather than a holding mechanism and an internal arm comprised of first and second arms.

As noted above, Mitchell shows this feature.

It would have been obvious for one of ordinary skill in the art at the time of the invention to have modified the apparatus of Dickinson by replacing the single robot arm in the vacuum chamber thereof with a holding mechanism and an internal arm comprised of first and second arms, as shown by Mitchell, as this would increase efficiency and productivity.

Re claim 6, Dickinson does not show the first and second internal arms to comprise independently swinging arms supported at different positions in a swing axial direction, with the first arm capable of swinging in a first direction to move an object at the load position to the first load lock mechanism, and the second arm capable of swinging in a second opposite direction to move another object from the first load lock mechanism to the load position, and the first and second arms further capable of

swinging in corresponding opposite third and fourth directions to move an object between the load position and the second load lock mechanism.

As noted above, Mitchell shows these features.

It would have been obvious for one of ordinary skill in the art at the time of the invention to have further modified the apparatus of Dickinson by utilizing independently swinging arms movable in the manner set forth, as shown by Mitchell, to further enhance efficiency and productivity.

9. Applicant's arguments filed 1/23/07 have been fully considered but they are not persuasive.

Applicant's arguments concerning claim 8 have been addressed above.

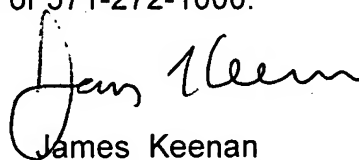
Applicant did not make any specific arguments concerning the modification of Dickinson in view of Mitchell as applied to previous claim 9.

10. Although the prior art does not clearly render claim 10 unpatentable and has therefore not been applied, this does not necessarily indicate that this claim contains allowable subject matter. Because this claim recites limitations of an element (second load lock mechanism) which is not even required by the claim from it depends, it is not possible to properly apply the art to this claim without resorting to speculation and conjecture as to the particular invention defined therein. See Ex Parte Lyell, 17 USPQ2d 1548, 1552.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Keenan whose telephone number is 571-272-6925. The examiner can normally be reached on (schedule varies).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kathy Matecki can be reached on 571-272-6951. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



James Keenan
Primary Examiner
Art Unit 3652

jwk
2/15/07